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09/437,649	11/10/1999	HIROKI ADACHI	SEL144	8264

7590

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EXAMINER

RAO, SHRINIVAS H

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 06/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application N .

09/437,649

Applicant(s)

ADACHI, HIROKI

Examiner

Steven H. Rao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) 1-7 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 8-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of paper submitted under 35 U.S.C. 119(a)-(d), from Japanese Patent Application No. 09/437,649 filed on November 11, 1999 which papers have been placed of record in the file.

### ***Information Disclosure Statement***

Acknowledgment is made of receipt of Applicant's Information Disclosure Statement (PTO-1449) filed on 3/15/2000.

The references on PTO 1499 submitted on 3/15/2000 are acknowledged. All the cited references have been considered. However the foreign patents and documents cited by applicant are considered to the extent that could be understood from the abstract and drawings.

### ***Preliminary Amendment Status***

Acknowledgment is made of entry of preliminary amendment filed 3 /17 /2003.

Therefore claims 8 to 33 as originally filed and presently newly added claims 34-37 are currently pending in the Application.

Claims 1-8 have been withdrawn from consideration as being drawn to non-elected claims.

***Election/Restrictions***

Claims 1-7 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected claims, there being no allowable generic or linking claim.

Election was made **without** traverse in Paper No.13.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8 –35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki ( U.S. Patent No. 6,362,027, herein after Yamazaki) and Akiyama et al. ( U.S. Patent No. 4,629,886 herein after Akiyama)..

With respect to claim 8 Yamazaki describes a method for manufacturing a semiconductor device comprising steps of : forming a gate electrode over a front side of a substrate; ( Yamazaki fig. 39) forming a semiconductor film over said gate electrode with a gate insulating film interposed there between; forming a photosensitive film over said semiconductor film; ( fig. 39, 504)

Yamazaki does not specifically describe the step of preparing a reflecting plate apart from a surface of said photosensitive film by a predetermined distance; to preparing a light source for emitting a light;

However, Akiyama in fig.1 M1M2 and M3 etc. and col. 1 lines 25-26 describes preparing a reflecting plate apart from a surface of said photosensitive film by a predetermined distance; to preparing a light source for emitting a light to provide a provide a reflective surface that can be easily moved to desired positions , provide a light beam of larger diameter and minimize adverse effect of impurity particles in its path.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include Akiyama's a reflecting plate apart from a surface of said photosensitive film by a predetermined distance in Yamazaki's method to preparing a light source for emitting a light to provide a provide a reflective surface that can be easily moved to desired positions , provide a light beam of larger diameter and minimize adverse effect of impurity particles in its path. a reflecting plate apart from a surface of said photosensitive film by a predetermined distance; to preparing a light source for emitting a light to provide a provide a reflective surface that can be easily moved to

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desired positions , provide a light beam of larger diameter and minimize adverse effect of impurity particles in its path.

The remaining limitations of claim 8 are : exposing said photosensitive film by irradiating it from a back side of said substrate with said light emitted from said light source using said gate electrode as a mask (Akiyama fig. 1 reflection from M2 and M3) and said reflecting plate for reflecting light having penetrated through said photosensitive film thereby said photosensitive film is irradiated from front side of said substrate with the light. ( Akiyama fig.1 light from M1 on front side of substrate)

With respect to claim 9. Yamazaki describes a method according to claim 8, wherein said semiconductor device is selected from the group consisting of a video camera, a digital camera, a head mount display, goggle type display, an wearable display, a navigation system for vehicles, a personal computer, a portable information terminal a mobile computer, a cellular phone, and an electronic book and comprises an EL display device. ( Yamazaki figs. 41 a to 41F, camera mobile computer etc.)

With respect to claim 10. Yamazaki describes a method of manufacturing a semiconductor device, comprising steps of : forming a pattern comprising a light-shielding film over a front side of a light transmissive substrate; ( Yamazaki figure 16 A to 16 D) forming a photosensitive film over said pattern; (Yamazaki fig. 16 C) reflecting or scattering by a reflecting means, which is opposite to said front side of said substrate, light from a light source which has penetrated through said photosensitive film, and irradiating said photosensitive film with the light from the front side of said substrate to expose the film; and developing the exposed photosensitive film. (a reflecting plate

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apart from a surface of said photosensitive film by a predetermined distance; to preparing a light source for emitting a light to provide a reflective surface that can be easily moved to desired positions , provide a light beam of larger diameter and minimize adverse effect of impurity particles in its path. (Akiyama fig. 1 reflection from M2 and M3, etc.)

With respect to claim 11, Yamazaki describes a method according to claim 10, wherein said semiconductor device is selected from the group consisting of a. video camera, a digital camera, a head mount display, goggle type display, an wearable display, a navigation system for vehicles, a personal computer, a portable information terminal a mobile computer, a cellular phone, and an electronic book and comprises an EL display device. ( Yamazaki figs. 41 a to 41F, camera mobile computer etc.)

With respect to claims 12. 14, and 16 Yamazaki describes A method of manufacturing a semiconductor device, comprising steps of: forming a pattern comprising a light-shielding film over a front side of a light transmissive substrate; forming a photosensitive film over said pattern; exposing said photosensitive film by irradiating it from a back side of said substrate with light emitted from a light source while using said pattern as a mask, and reflecting or scattering by a reflecting means, which is opposite to said front side; of said substrate, the light from the light source which has penetrated through said photosensitive film, so that said photosensitive film is irradiated from the front side of said substrate with the light and is exposed; and to

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developing the exposed photosensitive film. ( rejected for same reasons stated under claims 8 and 10 above).

With respect to claims 13, 15 Yamazaki describes a method according to claim 12, wherein said semiconductor device is selected from the group consisting of a video camera, a digital camera, a head mount display, goggle type display, an 15 wearable display, a navigation system for vehicles, a personal computer, a portable information terminal a mobile computer, a cellular phone, and an electronic book and comprises an EL display device. ( Yamazaki figs. 41 a to 41F, camera mobile computer etc.)

With respect to claim 17 Yamazaki describes a method according to claim 16, wherein said second pattern is small in size as compared to said gate wiring pattern, and is larger s than said first pattern. ( Yamazaki figure 15).

With respect to claim 18 Yamazaki describes a method according to claim 16, wherein the shape of said pattern comprising the photosensitive film corresponds to a reduced shape of said gate wiring pattern. ( Yamazaki fig. 16 D).

With respect to claim 19 Yamamzaki describes a method according to claim 16, wherein said reflecting means is a reflecting plate on which a film comprising a reflective material is formed. ( Akiyama fig.1 M1, fig. 3 ).

With respect to claim 20 Yamazaki describes a method according to claim 16, wherein said insulating film is a layer selected from a silicon nitride film, a silicon oxide nitride film, a silicon oxide film and an organic resin film, and a laminated



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film of those. ( Yamamzaki fig. 1B #107)

With respect to claim 21. A method according to claim 16, wherein said semiconductor device is selected from the group consisting of a video camera, a digital camera, a head mount display, goggle type display, an wearable display, a navigation system for vehicles, a personal computer, a portable information terminal a mobile computer, a cellular phone, and an electronic book and comprises an EL display device. ( Yamamzaki figs. 41 A to F)

With respect to claim 22. A method of manufacturing a semiconductor device, comprising steps of: forming a gate wiring over a front side of a light transmissive substrate; forming a gate insulating film on said gate wiring; forming a semiconductor film on said gate insulating film; to forming an insulating film on said semiconductor film; forming a photosensitive film on said insulating film; exposing said photosensitive film by irradiating it from a back side of said substrate with light emitted from a light source while using said gate wiring as a mask, and reflecting or scattering by a reflecting means, which is opposite to said front side of said substrate, the light from the light source which has penetrated through said photosensitive film, so that said photosensitive film is irradiated from the front side of said substrate with the light and is exposed; removing an exposed part of the photosensitive film to form a pattern comprising the photosensitive film; selectively removing said insulating film using said pattern as a mask to form a pattern comprising said insulating film; removing said pattern comprising the photosensitive film; ( rejected for reasons stated under claims 10,12,14 and16) and doping said semiconductor film with a dopant for imparting a

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conductivity using as a mask said pattern comprising the insulating film. ( Yamazaki figs. 12 A to 12 D, etc.).

With respect to claim 23 Yamazaki describes a method according to claim 22, wherein said second pattern is small in size as compared to said gate wiring pattern, and is larger than said first pattern. ( Yamazaki figure 15).

With respect to claim 24. Yamamzaki describes a method according to claim 22, wherein the shape of said pattern comprising the photosensitive film corresponds to a reduced shape of said gate wiring pattern. ( Yamazaki fig. 16 D).

With respect to claim 25 Yamazaki describes a method according to claim 22, wherein said reflecting means is a reflecting plate on which a film comprising a reflective material is formed. ( Akiyama fig.1 M1, fig. 3 ).

With respect to claim 26 Yamazaki describes a method according to claim 22, wherein said insulating film is a layer selected from a silicon nitride film, a silicon oxide nitride film, a silicon oxide film and an organic resin film, and a laminated film of those. ( Yamamzaki fig. 1B # \$ 107)

With respect to claim 27 Yamazaki describes a method according to claim 22, wherein said semiconductor device is selected from the group consisting of a video camera, a digital camera, a head mount display, goggle type display, an wearable display, a navigation system for vehicles, a personal computer, a portable information terminal a mobile computer, a cellular phone, and an electronic book and comprises an EL display device. ( Yamamzaki figs. 41 A to F)

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With respect to claim 28 Yamazaki describes a method of manufacturing a semiconductor device, comprising steps of: forming a gate wiring over a front side of a light to transmissive substrate; forming a gate insulating film on said gate wiring; forming a semiconductor film on said gate insulating film; forming an insulating film on said semiconductor film; forming a first photosensitive film on said insulating film; is exposing said first photosensitive film by irradiating it from a back side of said substrate with light emitted from a light source while using said gate wiring as a mask, and reflecting or scattering by a reflecting means, which is opposite to said front side of said substrate, the light from the light source which has penetrated through said first photosensitive film, so that said first photosensitive film is irradiated with the light from the front side of said substrate and is exposed; removing an exposed part the first photosensitive film to form a pattern comprising the first photosensitive film; selectively removing said insulating film while using said pattern as a mask to form a first pattern comprising the insulating film; removing said pattern comprising said first photosensitive film; forming a second photosensitive film; exposing said second photosensitive film by irradiating it from the back side of said substrate with light emitted from the light source while using said gate wiring as a mask, and reflecting or to scattering by a reflecting means, which is opposite to the front side of said substrate, the light from the light source which has penetrated through said second photosensitive film, so that said second photosensitive film is irradiated with the light from the front side of said substrate and is exposed; is removing an exposed part of the second photosensitive film to form a second pattern comprising the second photosensitive film;

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doping with a high concentration of dopant for imparting conductivity while using as masks said first pattern and said second pattern; removing said second pattern; and doping a low concentration of dopant for imparting conductivity while using as a mask said first pattern. ( same reasons as under claims 6,8,10,12,14 and 16 and Yamazaki figs. 12 A to 12 D).

With respect to claim 29 Yamazaki describes a method according to claim 28, wherein said second pattern is small in size as compared to said gate wiring pattern, and is larger than said first pattern. ( Yamazaki figure 15).

With respect to claim 30. Yamazaki describes a method according to claim 28, wherein the shape of said pattern comprising the photosensitive film corresponds to a reduced shape of said gate wiring pattern. ( Yamazaki fig. 16 D).

With respect to claim 31 Yamamzaki describes a method according to claim 28, wherein said reflecting means is a reflecting plate on which a film comprising a reflective to material is formed. . ( Akiyama fig.1 M1, fig. 3 ).

With respect to claim 32 Yamazaki describes a method according to claim 28, wherein said insulating film is a layer selected from a silicon nitride film, a silicon oxide nitride film, a silicon oxide film and an organic resin film, and a laminated is film of those. ( Yamamzaki fig. 1B # \$ 107)

With respect to claim 33 Yamazaki describes a method according to claim 28, wherein said semiconductor device is selected from the group consisting of a video camera, a digital camera, a head mount display, goggle type display, an wearable display, a navigation system for vehicles, a personal computer, a portable information

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terminal a mobile computer, a cellular phone, and an electronic book and comprises an EL display device. ( Yamamzaki figs. 41 A to F)

With respect to claim 34, Yamamzaki describes a method of manufacturing a semiconductor device, comprising steps of: forming a pattern comprising a light-shielding film over a front side of a light transmissive substrate; forming a photosensitive film over said pattern; preparing a reflecting means located opposite to said photosensitive film; preparing a light source for emitting a light; and exposing said photosensitive film by irradiating it from a back side of said substrate with said light emitted from said light source while using said pattern as a mask wherein a reflecting means reflects a light passing through said photosensitive film, thereby said photosensitive film is irradiated from the front side of said substrate with the light and is exposed. ( rejected for reasons set out under claims 5,6,8,10,12,14,16 ,22,and 28).

With respect to claim 35. Yamamzaki describes a method of manufacturing a semiconductor device, comprising steps of: forming a pattern comprising a light-shielding film over a front side of a light transmissive substrate; forming a photosensitive film over said pattern; preparing a reflecting means located opposite to said photosensitive film; preparing a light source for emitting a light; and exposing said photosensitive film by irradiating it from a back side of said substrate with said light emitted from said light source while using said pattern as a mask wherein a reflecting means reflects a light passing through said photosensitive film, thereby said

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photosensitive film is irradiated from the front side of said substrate with the light and is exposed. ( rejected for reasons set out under claims 5,6,8,10,12,14,16 ,22,28 and 34).

With respect to claim 36. Yamazaki describes a method according to claim 35, wherein a shape of the photosensitive film over said pattern corresponds to a reduced shape of said pattern comprising the lightshielding film. ( Yamazaki fig. 16 D).

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Steven H. Raoi whose telephone number is (703) 306-5945. The examiner can normally be reached on Monday- Friday from approximately 7:00 a.m. to 5:30 p.m.

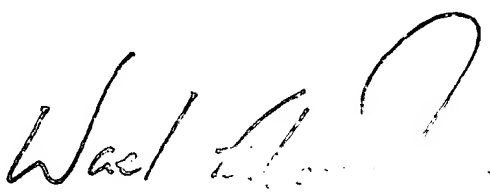
Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956. The Group facsimile number is (703) 308-7724.



Steven H. Rao

Patent Examiner

May 31, 2003.



SUPERVISOR  
TECHNOLOGY CENTER